

Learning Environments Research
Manuscript Draft

Manuscript Number: LERI4

Title: Classroom learning experiences and students' perceptions of quality of school life

Article Type: Manuscript

Section/Category:

Keywords: Quality of School Life, Social Development, Learning Experiences, Active Learning, Powerful Learning

Abstract: It is generally believed that classroom learning experiences are very much influential to students' academic development. However, relatively little is known whether classroom learning experiences would have much effect on students' affective and social development. In this study, we argued for the importance of learning experiences on students' affective and social development. From research studies on Accelerated Schools Project and active learning, we conceptualized Positive Learning Experiences, Teacher Support in Learning, and Active Learning Experiences as three components of learning experiences and developed relevant measures to tap these learning experiences. Using research data of a large-scale student survey in Hong Kong (N=19477), we examined the construct validity of learning experiences and quality of school life. Confirmatory factor analysis provided very strong support for the measures and the underlying constructs that these measures were designed to tap. In two-way analysis of variance, the effects of gender and school-level (secondary versus primary) on learning experiences and quality of school life were examined. Significant gender and school-level main effects as well as gender by school-level interaction effects were found on students' ratings on their learning experiences and quality of school life. Female students gave more favorable ratings than male students, and primary students gave more favorable ratings than secondary students on their learning experiences and quality of school life. In addition, the gender differences on these ratings in secondary schools were relatively smaller than that in primary schools. In subsequent multi-level modeling of students' perceptions of quality of school life, learning experiences were strong predictors of quality of school life, after controlling for the effects of gender, school-level, and school-average achievement. These findings provided very strong empirical support for the significance of classroom learning experiences on students' social and affective development.

**Classroom Learning Experiences and
Students' Perceptions of Quality of School Life**

Chit-Kwong KONG, The Chinese University of Hong Kong

10 June, 2006

Running Head: Quality of School Life

Author's Contact Details

Dr. Chit-Kwong Kong

Hong Kong Institute of Educational Research,

The Chinese University of Hong Kong, Shatin, N.T., Hong Kong.

Email: ckkong@cuhk.edu.hk

Phone: 852-2948-3264

FAX: 852-2603-7551

Abstract

It is generally believed that classroom learning experiences are very much influential to students' academic development. However, relatively little is known whether classroom learning experiences would have much effect on students' affective and social development. In this study, we argued for the importance of learning experiences on students' affective and social development. From research studies on Accelerated Schools Project and active learning, we conceptualized Positive Learning Experiences, Teacher Support in Learning, and Active Learning Experiences as three components of learning experiences and developed relevant measures to tap these learning experiences. Using research data of a large-scale student survey in Hong Kong (N=19477), we examined the construct validity of learning experiences and quality of school life. Confirmatory factor analysis provided very strong support for the measures and the underlying constructs that these measures were designed to tap. In two-way analysis of variance, the effects of gender and school-level (secondary versus primary) on learning experiences and quality of school life were examined. Significant gender and school-level main effects as well as gender by school-level interaction effects were found on students' ratings on their learning experiences and quality of school life. Female students gave more favorable ratings than male students, and primary students gave more favorable ratings than secondary students on their learning experiences and quality of school life. In addition, the gender differences on these ratings in secondary schools were relatively smaller than that in primary schools. In subsequent multi-level modeling of students' perceptions of quality of school life, learning experiences were strong predictors of quality of school life, after controlling for the effects of gender, school-level, and school-average achievement. These findings provided very strong empirical support for the significance of classroom learning experiences on students' social and affective development.

Introduction

The affective and social development of students has long been a central concern of schools, and this concern is often recognized in statements of school missions and visions. Despite its importance, students' affective and social development has been examined much less than that of students' academic development. Schools always assume that they could help, to a certain extent, the affective and social development of their students, but comparatively little is known how good they are, how far they can go, and the effective ways to achieve it. This study attempted to examine these issues.

Recently, there is advancement in theories and measurement in students' affective and social development (Ainley, Batten, Collins, & Withers, 1998; Ainley, Goldman, & Reed, 1990; EMB, 2003a, 2003b; Esptein and Mcpartland, 1976; Karatzias, Power, & Swanson, 2001; Pang, 1999a, 1999b). For example, Ainley, Goldman and Reed (1990) have developed a theoretical framework and relevant measures to tap students' perceptions of quality of school life. A number of empirical studies have provided preliminary support for their theory and measures (Ainley, Goldman, & Reed, 1990; Mok, & Flynn, 2002; Mok, & McDonald, 1994; Pang, 1999a, 1999b). In this study, we tested the validity of their measures in the local context and examined some of the determinants of quality of school life. Central to our article is the idea that classroom learning experiences, such as positive learning experiences, are important determinants of students' perceptions of quality of school life.

Quality of school life

The conceptualization of quality of school life was first proposed by Esptein and Mcpartland (1976). In their initial model, quality of school life was defined by three dimensions of student reactions: Attitudes toward Teachers, Commitment to School Work, and Satisfaction with School in General. The Attitudes toward Teachers concerns the nature of student-teacher relationships. The Commitment to School Work deals with students' level of interest in school work. And the Satisfaction with School in General measures global feelings to school. Esptein and Mcpartland (1976) also developed a 27-item measure of quality of school life and a number of studies have provided preliminary support for the

concurrent and discriminate validity of the construct and the measure (Esptein & Mcpartland, 1976; Johnson & Johnson, 1993).

A number of researchers have extended Esptein and Mcpartland's (1976) model to include more dimensions of quality of school life (e.g., Ainley, Goldman, & Reed, 1990; Ainley, Reed, & Miller, 1986; William & Batten, 1981). For example, William and Batten (1981) have identified five specific dimensions of quality of school life and two dimensions of global feelings of school experience. The five specific dimensions included:

- (a) Teacher-student relations: it concerns the quality of interactions between teachers and students (e.g., My school is a place where my teachers help me to do my best.)
- (b) Social integration: it concerns the students' relationship with classmates and other people (e.g., My school is a place where other students accept me as I am.)
- (c) Opportunity: it concerns the students' perceptions on the relevance of schooling to his/her life experience (e.g., My school is a place where the things I learn are important to me.)
- (d) Achievement: it concerns a sense of being successful in schoolwork. (e.g., My school is a place where I am a success as a student.)
- (e) Adventure: it is a sense of self-motivation in learning and a sense that learning is enjoyable for its own sake. (e.g., My school is a place where I am excited about the work we do.)

The two global feelings of quality of school life were:

- (f) General satisfaction: it concerns general positive feelings about school (e.g., My school is a place where I really like to go each day).
- (g) Negative affect: it concerns general negative personal reactions to school (e.g., My school is a place where I feel upset).

Measures on these dimensions have been developed and validated in different school systems and countries (Ainley, Goldman, & Reed, 1990; Ainley, Reed, & Miller, 1986; Mok & McDonald, 1994; Pang, 1999a, 1999b; Wilson, 1988). For example, in a study particular relevant to Chinese learners, Pang (1999b) validated a revised measure of quality of school life using 2460 students from three selected Band 5 secondary schools in Hong Kong. The

two general dimensions (General Satisfaction and Negative Affects) were clearly identified. Among the five specific dimensions, however, only four dimensions were resulted, including Teacher-Student Relations, Social Integration, Opportunity, and Adventure. The Achievement dimension did not emerge as a separate dimension in the students' views of quality of school life in the three Band 5 schools.

In another study, Mok and McDonald (1994) examined the construct validity of quality of school life using 5932 twelfth-year students in 50 Australian schools. The central focus of their study was the partition of variances of mean scores in quality of school life between student and school levels. The results demonstrated that the between-student variance of the mean was much greater than the between-school variance in each dimension of quality of school life. It was estimated that school differences could only account for 2%-3% of the total variance. Mok and McDonald (1994) concluded that quality of school life was primarily a measure of student experience rather than a measure of school climate.

Determinants of quality of school life

Researchers have extended their studies to examine the relationships between quality of school life and other student and classroom characteristics. Using a cross-lagged two-wave panel study of 51 fourth graders, Wolf and Chandler (1981) demonstrated that quality of school life and achievement responsibility were mutually causation to each other. In a large-scale survey study of 8265 Grade 12 students from 70 schools in Australia, Mok and Flynn (2002) examined the impact of a number of student and classroom variables on quality of school life. Students' background characteristics, their expectations of schools, perceived quality of school curriculum, and classroom environment were used as predictors of quality of school life. Analysis showed that, after controlling for the effects of other variables, students' experience of the classroom environment was the single most important factor explaining their quality of school life.

Karatzias, Power, Flemming, Lennan, & Swanson (2002) studied the role of demographics, personality variables and school stress on predicting school satisfaction. The subjects were 425 pupils in two Scottish secondary schools. It was found that gender and grade level were significant predictors of quality of school life: girls and younger children

reported higher levels of quality of school life than their corresponding counterparts. The results also revealed that school self-esteem, affectivity, and school stress were all strong and significant predictors of quality of school life.

Similarly, in a study of the quality of school life of school children in Finnish comprehensive school (N=1123), gender, parents' education and student's own educational aspirations, as well as TV watching, emerged as important predictors of both general school satisfaction and teacher-student relations. Being a girl, having partners with a good professional status, one's own academic or vocational educational aspirations, and slight or moderate TV watching explained a positive attitude towards school and teachers (Malin & Linnakyla, 2001).

In summary, previous studies demonstrated that quality of school life was related to (i) student background characteristics such as gender and grade level (Karatzias et al., 2002; Malin & Linnakyla, 2001); (ii) personal characteristics such as perceptions of achievement responsibility, self-esteem, locus of control, affectivity, and educational aspiration (Karatzias et al., 2002; Malin & Linnakyla, 2001; Wolf & Chandler, 1981); and (iii) experience of the classroom environment (Mok & Flynn, 2002). In this study, we extended previous research by identifying classroom learning experiences as potentially important predictors of quality of school life. We argued that children's learning experiences are very important aspects of their school life. The quality of their learning experiences would consequently affects their perceptions of quality of school life (Chiu, Chan, Chiu, & Wong, 2002; Edison & Hillhouse, 1998; Hopfenberg, Levin, & Associates, 1993). The following sections gave a brief overview of the conceptions of learning experiences in this study.

Conceptions of learning experiences

Our research was stemmed from two lines of conceptions of learning. They were the powerful learning and active learning. The concept of powerful learning was originated from the specific approach to learning in the Accelerated Schools Project. The fundamental goal of the Accelerated Schools Project is to provide enriched learning experiences to at-risk students so that they can have accelerated progress in student achievement. In order to accomplish this, it is necessary to integrate three fundamental elements in learning in a very successful manner: (a) what the student would learn; (b) how the learning opportunities are created; and (c) how

to produce the best context for learning (Chiu, Chan, Chiu, & Wong, 2002; Hopfenberg, Levin, & Associates, 1993). The underlying principal is to create situations in which each student has an interest in learning, see a meaning in the lesson, and perceives connections between each school activity and his or her real life. All in all, the at-risk students are “treated” as gifted children and the corresponding learning strategies for gifted children are employed, and complex learning activities are designed. Practitioners in Accelerated Schools work together to create powerful learning experiences in which each child is challenged and actively involved in learning in a safe and caring environment (Chiu, Chan, Chiu, & Wong, 2002; Hopfenberg, Levin, & Associates, 1993). Through this powerful learning approach, students learn to construct knowledge from new experiences and learn how to apply concepts and solve problems. Thus, powerful learning is more than just a way of teaching and learning. It involves coordinated decisions about what we hope students will learn, how we create these opportunities, and how we can draw upon our environment to provide a powerful learning context (Eidson & Hillhouse, 1998; Finnan & Swanson, 2000).

Researchers have identified several tenets in creating powerful learning experiences. Powerful learning is authentic in that the activities related to the real-life, day to day situations that students encounter. Powerful learning is inclusive in that all students are involved in a way that their ideas, concerns, and voices are valued as respected contributions to all considerations. Powerful learning is learner-centered in that the activities address the specific interests of individual participants. Powerful learning is interactive in that all learners are involved actively with other learners in a process of transforming experiences into knowledge. Powerful learning is continuous in that the activities are ongoing during each day of the school year. And finally, powerful learning is investigative in that hands-on experiences and discovery-oriented are emphasized (Chiu, Chan, Chiu, & Wong, 2002; Hopfenberg, Levin, & Associates, 1993).

The term ‘active learning’ is often used to contrast the ‘passive learning’ situations in traditional classrooms that the teachers do most of the work and the students remain passive. The important criterion for active learning is the degree of mental activity that the learner is challenged to use while learning (Simons, 1997). Therefore, active learning has been defined

as the provision of learning opportunities for students to “talk and listen, read, write, and reflects through problem-solving exercises, informal small groups, simulations, case studies, role playing, and other activities that require student to apply what they are learning” (Meyers & Jones, 1993, p.xi). And it is generally believed that students learn best when applying their knowledge and subject matter while learning (Meyers & Jones, 1993; Stern & Huber, 1997).

The importance of active learning has been emphasized in recent years (e.g., Sivan, Leung, Woon, & Kember, 2000). This change could perhaps be attributed to two reasons. First, active learning can be more attractive than other forms of passive learning because the learners can become more motivated and interested when their mental ability is challenged. Second, active learning is supposed to be essential and related to the development of the ability of ‘learning how to learn’ and ‘commitment to lifelong learning’. By practicing how to do it, students can learn ‘how to learn’ and develop more favorable feelings and ‘commitment to lifelong learning’ (Stern & Huber, 1997).

Even though powerful learning and active learning have been conceptualized from different researchers, the two learning approaches do share common theoretical grounds and beliefs. The overarching background for both powerful learning and active learning is the constructivist theory. In brief, constructivism sees the student as the prime actor in acquiring his or own knowledge, while the teacher serves as a facilitator towards this acquisition. For learning to occur, the learner must synthesize his or her new learning experiences based on prior knowledge and understanding. The teacher could facilitate this transformation by providing appropriate challenge, help, and learning opportunities to the students. Because active learning and powerful learning share common theoretical background, they are presumably related substantially. However, the two concepts are still distinguishable from each other. In active learning, we emphasize the role of the learner as active information and knowledge seeker and the provision of such learning opportunities for the learner. On the other hand, in powerful learning, we emphasize the supportive role of the teacher as well as the appropriateness of the learning content and context for meaningful and enjoyable learning. In sum, we believe that active learning and powerful learning are correlated but

distinguishable components of learning experiences. In this study, we attempted to examine the effects of these learning experiences on students' perceptions of quality of school life.

Method

Sample

The data were derived from a large-scale school-improvement project in Hong Kong (the Quality Schools Project, QSP). The original project, funded by the Quality Education Funds of the Hong Kong Special Administration Region, served 40 primary and secondary schools in Hong Kong from 2001 to 2003. The participating schools were voluntary, but with a strong intention to have school-based improvement with the assistance of the school development team from QSP. It turned up that a slightly larger proportion of the low-ability schools had joined the project. Despite this slight inclination to the low-ability end of the ability spectrum, the participating schools were broadly representative of the primary and secondary schools in Hong Kong in terms of school-organizing bodies, school districts, mode of subsidy (government, aided, and private), religious background, as well as the gender-specificity of schools (co-educational versus single-sex).

The research data were collected from the key stakeholders of the schools including school principals, teachers and students. Various methods were adopted in data collection such as questionnaire surveys, in-depth interviews, and class observations. In particular to this study, only the quantitative research data of the student survey in the second year were used. The sample consisted of 19477 primary and secondary students in Hong Kong ($N_s=7771$ and 11706 for primary and secondary students respectively). Students were selected from Grades 4 to 10 ($N_s=2648, 2699, 2646, 3074, 3023, 2882$, and 2469 for Grade 4, 5, 6, 7, 8, 9, and 10 respectively). There were 9457 males (48.6%), 9762 females (50.1%), and 258 cases (1.3%) with missing gender information.

Measures

Quality of school life. Quality of school life was measured by a Chinese version of the original Australian questionnaire validated by Pang (1999a, 1999b). Only four specific dimensions (Teacher-Student Relations, Sense of Achievement, Social Integration, & Adventurous Experience) and a global dimension (General Satisfaction) were used in this

study. The items were listed in Table 1. The reliability of each dimension was estimated by Cronbach's alpha. Specifically, the reliability coefficients were .91 for Teacher-Student Relations, .80 for Sense of Achievement, .89 for Social Integration, .81 for Adventurous Experience, and .90 for General Satisfaction.

Learning experiences. Items for learning experiences were self-constructed for this study. Three components of learning experiences were examined: Positive Learning Experiences, Teacher's Support in Learning, and Active Learning Experiences. Previous research has demonstrated that powerful learning activities are in general more interesting, wonderful, energetic, useful and joyful (Brandt, 1998). In addition, powerful learning situations also provide more teacher-support and individual care to the learners (Finnan, McCarthy, St. John, & Slovacek, 1996). Based on these ideas, Positive Learning Experiences were tapped by asking the students to rate the extent to which they felt interesting, fun, energetic, useful, and innovative in their class learning experiences. On the other hand, Teacher's Support in Learning was inferred from students' ratings on teacher's support and individual care in the learning situations. The items were listed in Table 1. The reliability coefficients for these scales were 0.86 and 0.84 for Positive Learning Experiences and Teacher's Support in Learning respectively. It was demonstrated that active learning is often associated with some forms of active learning approaches and strategies such as group discussion, role-playing, group game etc (Meyers & Jones, 1993; Stern & Huber, 1997). In this study, five self-constructed items were used to tap Active Learning Experiences: (i) "we often have group discussion in class." (ii) "we often have role-playing in class." (iii) "we often have group game in class." (iv) "the teacher often arranges some outside-school visits (such as public library, museum)." And (v) "the teacher often asks us to find information by using computers." The reliability coefficient for this scale was 0.79.

School-average achievement. School-average achievement was used as an indicator of the academic standard of the school. This figure was estimated by the students' performance in the Hong Kong Attainment Tests. In each academic year, primary and secondary schools in Hong Kong are advised to conduct the Hong Kong Attainment Tests as a monitoring exercise of the academic standard of their students in comparison to that of the Hong

Kong norms. Each school has the individual student scores and can be used to aggregate the school-average achievement. In this study, the participating school provided the school-average achievement to the research team. But two schools found difficulties in providing such school information to the research team, for these two schools, their school standards were estimated by comparison with schools with similar student characteristics. Because the scores of Hong Kong Attainment Tests were standardized with respect to the norm information at each academic level, figures from different levels, such as that from primary and secondary schools, were also comparable in a relative sense (in terms of standard scores). In this study, school-average achievement was used as a school-level predictor in modeling students' perceptions of quality of school life.

Statistical analysis

Three different analyses were conducted. The construct validity of the measures was first examined by confirmatory factor analysis. The three components of learning experiences (Positive Learning Experiences, Teacher's Support in Learning, and Active Learning) and the five dimensions of quality of school life (Teacher-Student Relations, Sense of Achievement, Social Integration, Adventurous Experience, and General Satisfaction) were fitted into an eight-factor model. Following the recommendations by some researchers, the model fit was evaluated by a number of criteria, including (a) the theoretical basis of the model; (b) the relative size of the parameter estimates (e.g., factor loadings, correlation among factors, and item residuals); and (c) the overall model fit, using comparatively stable and reliable model-fit-indices such as Root Mean Square Error of Approximation (RMSEA), Non-Normed Fit Index (NNFI), and Comparative Fit Index (CFI; Marsh, Balla, & Hau; 1996).

The second analysis examined the effects of gender and school-level (secondary versus primary) on learning experiences and quality of school life. Gender and school-level were used as the independent factors, and two-way analysis of variance was conducted on each component of learning experiences and quality of school life. Finally, the analysis was extended to model the effects of a number of student and school variables on students' perceptions of quality of school life using multi-level regression analyses. An aggregated measure of quality of school life was used as the criterion variable, gender, school-level

(secondary versus primary), Positive Learning Experiences, Teacher's Support in Learning and Active Learning Experiences were used as the student-level predictors, whereas the school-average achievement was used as the school-level predictor.

Results

Construct validity of the measure

The factor structure of the learning experiences and quality of school life was showed in Table 1. The three components of learning experiences and the five factors of quality of school life were all clearly defined. The factor loadings on the target factors were all high, ranged from .45 to .86, with a medium value of .73. The overall-model-fit was very good: $\chi^2=32243.62$ (df=961), RMSEA=0.041, NNFI=.94 and CFI=.94. The results provided very strong empirical support for the construct validity of the measures used in this study.

The factor correlation was estimated by LISREL and showed in Table 1. The results showed that (i) the three learning experiences components were substantially correlated, (from .73 to .80, median=.75), (ii) the different dimensions of quality of school life were substantially correlated (from .62 to .87, median=.76), and (iii) quality of school life was also correlated significantly with learning experiences (from .32 to .71, median=.52). The factor correlation also demonstrated a certain degree of discriminant validity of the measures. Whereas Positive Learning Experiences correlated substantially higher with the learning-oriented dimensions of quality of school life such as Sense of Achievement (.71), Adventurous Experience (.71), and Teacher-Student Relations (.66), it correlated relatively lower with the social-oriented dimensions of quality of school life such as Social Integration (.48). Similar pattern emerged in the correlation between Teacher's Support in Learning, and different dimensions of quality of school life, and that between Active Learning and different dimensions of quality of school life.

Gender and school-level (secondary versus primary) effects on learning experiences and quality of school life

The descriptive statistics of the scale scores were showed in Table 2. The mean values and 2-way analysis of variance demonstrated that (i) students in secondary school rated lower in their learning experiences and quality of school life (significant main effects of school-level: secondary versus primary), (ii) male students gave less favorable ratings than the corresponding female students on their perceived learning experiences and quality of school life (significant main effects of gender), and (iii) the gender gaps in learning experiences and quality of school life in secondary school were much smaller than that in primary school (significant gender by school-level interaction effects).

Higher-order structure of quality of school life

The results of the first-order confirmatory factor analysis (Table 1) showed that the different dimensions of quality of school life were clearly identified and the correlation coefficients among different dimensions were substantially high (ranged from .62 to .87, median=.76). The high correlation among factors suggested that a higher-order factor might be sufficiently strong to account for the covariance among the first-order factors. In order to justify this argument, additional hierarchical confirmatory factor analyses were conducted by LISREL. The correlated five-factor model represented the best-fit model and hence served as the baseline model for subsequent model comparison. The overall model fit indices for the baseline model were $\chi^2=22473.48$ (df=424), RMSEA=0.052, NNFI=.94 and CFI=.94. The higher-order factor model was specified by loading different dimensions of quality of school life into a second-order factor. The results showed that the factor loadings were all substantially high, they were 0.92, 0.95, 0.86, 0.98, and 0.91 for Teacher-Student Relations, Sense of Achievement, Social Integration, Adventurous Experience, and Satisfaction, respectively in the completely standardized solution. This second-order factor model also yielded very good overall model fit, the fit indices were $\chi^2=26567.47$ (df=430), RMSEA=0.056, NNFI=.91 and CFI=.92. And because the discrepancies between the baseline model and the second-order factor model were reasonably small ($\Delta\chi^2=4093.99$, $\Delta df=6$, $\Delta RMSEA=0.004$, $\Delta NNFI=.03$ and $\Delta CFI=.02$), it was concluded that the second-order

factor model gave a sufficiently good representation of the correlated five-factor model. In order to avoid repetition and simplify our presentation, subsequent regression analyses were based on an aggregated measure of quality of school life.

=====

Insert Tables 1 & 2 About Here

=====

Determinants of quality of school life

A global measure of quality of school life was aggregated by a weighted combination of the different dimensions of quality of school life. The aggregated measure (Quality of School Life) was then modeled by a number of student and school variables such as gender, school-level (secondary versus primary), school-average achievement, and the three components of learning experiences using hierarchical regression analysis. In order to facilitate the interpretation of the regression coefficients, all continuous measures including Quality of School Life, Positive Learning Experiences, Teacher's Support in Learning, and Active Learning were standardized to have zero mean and unit standard deviation. And because the School-average Achievement was initially aggregated from standardized scores of Hong Kong Attainment Tests, the aggregated measure has retained significant meaning in Territory-wide school comparison, we retained its original metric system without further standardization. A series of five models were examined and the results were summarized in Table 3.

The first model (Model 1, Table 3) illustrated the relative proportions of variance between the student and the school levels (variance component: student versus school=0.940 to 0.067). These figures revealed that a very much large portion of the variance in Quality of School Life lied in the student level. In other words, there were very much variations among students in their perceptions of Quality of School Life in the same school. In sharp contrast, the variations in students' perceptions of Quality of School Life between different schools were comparatively small ($0.067/(0.940+0.067)=6.7\%$), even though there were considerably differences in other school characteristics.

Model 2 & Model 3 (Table 3) reproduced the major findings in the 2-way (school-level by gender) ANOVA (Table 2). In general, secondary students on average had lower Quality of School Life than primary students (-0.350 SD, Model 3), and male students had lower Quality of School Life than comparable female students (-0.443 SD, Model 3), and the gender gap in Quality of School Life between male and female students was smaller in secondary schools (+0.214 SD, Model 3).

Measures of learning experiences (Positive Learning Experiences, Teacher's Support in Learning, & Active Learning Experiences) were included as student-level predictors of Quality of School Life in Model 4 (Table 3). Controlling the effects of school-level (secondary versus primary) and gender, Positive Learning Experiences, Teacher's Support in Learning and Active Learning Experiences were all strong predictors of students' Quality of School Life. The better the student perceived his/her learning experiences, the higher the student's ratings on Quality of School Life.

The inclusion of measures of learning experiences in the model had substantially reduced the residual variance of Quality of School Life in both student-level (from 0.926 to 0.497, a 46% reduction) and school-level (from .040 to .010, a 75% reduction). These figures further demonstrated the strong explanative power of Positive Learning Experiences, Teacher's Support in Learning and Active Learning Experiences on Quality of School Life.

It should be noted that the effects of school-type (secondary versus primary) on Quality of School Life became insignificant when the three components of learning experiences were control for (Model 4, Table 3). It was primarily because secondary school students tended to give relatively lower ratings in both their perceptions of quality of school life and learning experiences. After partialing out the effects of learning experiences on quality of school life, the difference in quality of school life between secondary and primary school students were negligibly small and insignificant. The results consistently demonstrated that secondary students used more stringent criteria than primary students in judging their learning experiences and quality of school life.

The school-average achievement was included as a school-level predictor in Model 5 (Table 3). This predictor had positive effects on students' Quality of School Life, showing

that students in high-achieving school had slightly better feelings than students in low-achieving school. However, inclusion of school-average achievement in the equation did not reduce substantially the explanative power of learning experiences on Quality of School Life. For example, there was almost no change on the regression coefficients for Positive Learning Experiences and Teacher's Support in Learning in Models 3 & 4, Table 3, and only a very minimal reduction in the regression coefficient for Active Learning Experiences (from 0.061 to 0.060) on Quality of School Life. The results clearly indicated that classroom learning experiences (e.g., Positive Learning Experiences, Teacher's Support in Learning, & Active Learning) had unique and substantially large contribution to students' Quality of School Life, no matter in high-achieving or low-achieving schools.

In all, the above series of multi-level hierarchical regression models summarized the effects of school-level (secondary versus primary), gender, school-average achievement and learning experiences on students' quality of school life. The results clearly demonstrated that classroom learning experiences had very strong predictive power on quality of school life, both in terms of the regression coefficients and the percentage of variance explained.

=====

Insert Table 3 About Here

=====

Discussion

The development of the measures of Positive Learning Experiences, Teacher's Support in Learning, and Active Learning Experiences is a unique feature of this study. Confirmatory factor analysis provides strong empirical support for the construct validity of the measures. The three learning experiences factors are clearly defined and show very good model-to-data fit. Correlation analysis shows the convergent and divergent validity of the measures. The three learning factors (Positive Learning Experiences, Teacher's Support in Learning, and Active Learning Experiences) are highly correlated among one another. And at the same time, the three factors are more correlated with learning-oriented dimensions of quality of school life, but less with social-oriented dimensions of quality of school life. In all, the results provide very strong empirical support for the measures of learning experiences in this study.

The two-way analysis of variance reveals significant gender and school-level (secondary versus) differences as well as their interaction effects on learning experiences and quality of school life. Female students tend to give more favorable ratings in learning experiences and quality of school life than the male students. Primary school students have better feelings in their learning experiences and quality of school life than that of secondary students. And the gender gap in students' ratings on learning experiences and quality of school life was smaller in secondary school than that in primary school. All of the above are informative background characteristics that researchers and teachers would like to realize. The results also suggest a declining developmental change in perceptions of learning experiences and quality of school life from primary to secondary school.

The multi-level modeling of quality of school life reveals several important findings. First of all, the variance components model (Models 1, Table 3) shows that quality of school life is primarily a measure of individual characteristics rather than an effective indicator of school climate. Most of the variation in quality of school life lies in the student-level. The proportion of variation attributed to school-level is very small. Therefore, the measure of quality of school life could be used to assess and follow the affective and social development of individual student in the school. But it would be less desirable to be used in detecting school differences in quality of school life in school effectiveness research.

In another multi-level model, school-average achievement is included as a predictor of students' quality of school life (Model 5, Table 3). The inclusion of such school measure is important in school effectiveness research because there are huge differences in academic standard between schools in Hong Kong (Lo et al., 1997) and the inclusion of such school variable could rectify the prior differences between schools. In general, a strong and positive effect of school-average achievement would be resulted on cognitive measures (such as academic achievement, e.g., Lo et al., 1997). However, in this study, the school-average achievement has a very slightly positive effect on measures of quality of school life, showing that students in high-achieving school do have better perceptions on their quality of school life than comparable students in low-achieving school, but the results also indicate that the advantage is very limited. In other words, student's affective and social development, in

comparison to that of cognitive variables, is much less susceptible to the academic standard of the school. These findings are very much encouraging for the low-achieving schools in their pursuing of school improvement because the results suggest that students could have very favorable quality of school life, even though they are studying in the low-achieving school.

Controlling for the effects of student gender, school-level (secondary versus primary), and school-average achievement, Positive Learning Experiences, Teacher's Support in Learning, and Active Learning Experiences have been identified as strong predictors of student's quality of school life. The results re-iterate the importance of classroom learning experiences in facilitating the affective and social development of the students in school. Previous research has identified classroom environment as a strong predictor of quality of school life (Mok & Flynn, 2002). Putting these together, research from various studies converges to demonstrate the significance of learning experiences and classroom environment on students' perceptions of quality of school life. This generalization is very much in line with the principles and values advocated in many of the school improvement projects in American (such as the Accelerated Schools Project) and the Quality School Improvement Project in Hong Kong (Chiu, 2002; Hopfenberg, Levin, & Associates, 1993).

Finally, a few words should be mentioned on the limitations of the present study. Even though a strong association between learning experiences and quality of school life has been established and some terms like "predictor" and "determinant" have been used in this article, we have no intention to claim that the relation is a causal one. The terms are used primarily because they are widely accepted and facilitate communications in modeling. In fact, our research design and data structure—a one time snapshot—has limited our inference to any further on the causal relationship between the two constructs. Nevertheless, this study has provided very strong empirical support for the construct and predictive validity of the two constructs and it is worthwhile to examine further by employing longitudinal and multi-wave research data of learning experiences and quality of school life in further research.

References

Ainley, J., Batten, M., Collins, C., & Withers, G. (1998). Schools and the social development of young Australians. Melbourne: Australian Council for Educational Research.

Ainley, J., Goldman, J., & Reed, R. (1990). Primary schooling in Victoria: A study of students' attitude and achievements in Years 5 and 6 of government primary schools. ACER Monograph No. 37. Hawthorn, Victoria: Australian Council for Educational Research.

Ainley, J., Reed, R., & Miller, H. (1986). School organization and the quality of schooling: A study of Victorian government secondary schools. ACER Monograph No. 29. Hawthorn, Victoria: Australian Council for Educational Research.

Brandt, R. (1998). Powerful learning. Alexandria: Association for Supervision and Curriculum Development.

Chiu, C. S. (2002). Quality Schools Project: Resource guide. Hong Kong: Chinese University of Hong Kong. (In Chinese)

Chiu, C. S., Chan, H. Y., Lee, Y. Y., Wong, K. S. (2002). Powerful learning: Theory and practice. In C. S. Chiu (Ed.), Quality Schools Project: Resource guide (pp.118-124). Hong Kong: Chinese University of Hong Kong. (In Chinese)

Education and Man Power Bureau (2003a). Users' and training manual for measuring primary students' performance in affective and social domains. Hong Kong: Hong Kong Special Administrative Region.

Education and Man Power Bureau (2003b). Users' and training manual for measuring secondary students' performance in affective and social domains. Hong Kong: Hong Kong Special Administrative Region.

Esptein, J. L. & Mcpartland J. M. (1976). The concept and measurement of the quality of school life. American educational Research Journal, 13(1), 15-30.

Eidson, C. B., & Hillhouse, E. D. (1998). The accelerated high school: A step-by-step guide for administrators and teachers. Thousand Oaks: Corwin..

Finnan, C., McCarthy, J., St. John, E., & Slovacek, S. (1996). Accelerated schools in action: Lessons from the field. Thousand Oaks: Corwin.

Finnan, C., & J. D. Swanson (2000). Accelerating the learning of all students: Cultivating culture change in schools, classroom, and individuals. Boulder: West view Press.

Hopfenberg, W. S., Levin, H. M., and Associates. (1993). The accelerated schools: Resource guide. San Francisco: Jossey-Bass Publishers.

Johnson, W. L., & Johnson, A. M. (1993). Validity of the quality of school life scale: A primary and second-order factor analysis. Educational and Psychological Measurement, 53(1), 145-153.

Karatzias, A., Power, K. G., Flemming, J., Lennan, F. & Swanson, V. (2002). The role of demographics, personality variables and school stress on predicting school satisfaction/dissatisfaction: Review of the literature and research findings. Educational Psychology, 22(1), 33-50.

Karatzias, A., Power, K. G., & Swanson, V. (2001). Quality of school life: Development and preliminary standardisation of an instrument based on performance indicators in Scottish secondary schools. School Effectiveness and School Improvement, 12(3), 265-284.

Lo, L. N. K., Tsang, W. K., Chung, Y. P., Cheng, Y. C., Sze, P. M. M., Ho, E, S. C., & Ho, M. K. (1997). A survey of the effectiveness of Hong Kong secondary school systems. Hong Kong: Chinese University of Hong Kong.

Malin, A., & Linnakyla, P. (2001). Multilevel modeling in repeated measures of the quality of Finnish school life. Scandinavian Journal of Educational Research, 45(2), 145-166.

Marsh, H. W., Balla, J. R., & Hau, K. T. (1996). An evaluation of incremental fit indices: A clarification of mathematical and empirical properties. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp.315-353). Mahwah: Lawrence Erlbaum.

Meyers, C. & Jones, T. B. (1993). Promoting active learning. San Francisco: Jossey-Bass.

Mok, M. M. C. & Flynn, M. (2002). Determinants of students' quality of school life: A path model. Learning Environments Research, 5(3), 275-300.

- Mok, M. M. C., & McDonald, R. P. (1994). Quality of school life: A scale to measure student experience or school climate? Educational and Psychological Measurement, 54(2), 483-495.
- Pang N. S. K. (1999a). Students' perceptions of quality of school life in Hong Kong primary schools. Educational Research Journal, 14(1), 49-71.
- Pang N. S. K. (1999b). Students' quality of school life in band 5 schools. Asian Journal of Counselling, 6(1), 79-106.
- Simons, P. R. J. (1997). Definitions and theories of active learning. In D. Stern & G. & Huber (Eds.), Active learning for students and teachers: Reports from eight countries (pp.19-39). New York: Peter Lang.
- Sivan, A., Leung, R. W., Woon, C. C., & Kember, D. (2000). An implementation of active learning and its effect on the quality of student learning. Innovations in Education and Training International, 37(4), 381-389.
- Stern, D., & Huber, G. (1997). Active learning for students and teachers: Reports from eight countries. New York: Peter Lang.
- Williams, T., & Battern, M. (1981). The quality of school life. ACER Monograph No. 12. Hawthorn, Victoria: Australian Council for Educational Research.
- Wilson, M. (1988). Internal construct validity and reliability of a quality of school life instrument across nationality and school level. Educational and Psychological Measurement, 48(5), 995-1009.
- Wolf, F. M., Chandler, T. A., & Spies, C. J. (1981). A cross-lagged panel analysis of quality of school life and achievement responsibility. Journal of Educational Research, 74(5), 363-368.

Table 1. Factor loadings and factor correlation among components of learning experiences, and quality of school life.

Items	Positive Learning Experiences	Teacher's Support in Learning	Active Learning Experiences	Teacher-Student Relations	Sense of Achievement	Social Integration	Adventurous Experience	General Satisfaction
Learning Experiences								
A02. I often feel that the activities in my class are very interesting.	.77	.00	.00	.00	.00	.00	.00	.00
A06. I often feel that the activities in my class are innovative.	.79	.00	.00	.00	.00	.00	.00	.00
A07. I often feel that I am energetic during my class.	.76	.00	.00	.00	.00	.00	.00	.00
A13. I often feel that the exercises are useful to my learning.	.61	.00	.00	.00	.00	.00	.00	.00
A14. I often feel fun in my class.	.77	.00	.00	.00	.00	.00	.00	.00
A04. The teacher often praises the performance of the students.	.00	.67	.00	.00	.00	.00	.00	.00
A05. The teacher often provides individual student with some ways for improving his/her learning.	.00	.74	.00	.00	.00	.00	.00	.00
A08. The teacher often helps students to set their learning goals.	.00	.69	.00	.00	.00	.00	.00	.00
A09. The teacher often encourages students to see whether their study methods are helpful or not to their learning.	.00	.73	.00	.00	.00	.00	.00	.00
A10. The teacher often gives suggestions to students' progress in learning.	.00	.75	.00	.00	.00	.00	.00	.00
A01. We often have group discussion in class.	.00	.00	.69	.00	.00	.00	.00	.00
A03. We often have role-playing in class.	.00	.00	.70	.00	.00	.00	.00	.00
A11. We often have group game in class.	.00	.00	.81	.00	.00	.00	.00	.00
A12. The teacher often arranges some outside-school visits (such as public library, museum).	.00	.00	.67	.00	.00	.00	.00	.00
A15. The teacher often asks us to find information by using computers.	.00	.00	.45	.00	.00	.00	.00	.00
Quality of School Life								
My school is a place where ...								
B02. my teacher guides me patiently.	.00	.00	.00	.70	.00	.00	.00	.00
B07. my teacher is fair to me.	.00	.00	.00	.75	.00	.00	.00	.00
B11. my teacher takes an interest in helping me with my work.	.00	.00	.00	.69	.00	.00	.00	.00
B15. my teacher listens to what I say.	.00	.00	.00	.76	.00	.00	.00	.00
B19. my teacher helps me to do my best.	.00	.00	.00	.74	.00	.00	.00	.00
B23. my teacher treats me fairly in class.	.00	.00	.00	.72	.00	.00	.00	.00
B27. my teacher helps me to solve problem.	.00	.00	.00	.79	.00	.00	.00	.00
B30. my teacher treats me as a friend.	.00	.00	.00	.78	.00	.00	.00	.00

B03. I achieve a satisfactory standard in my work.	.00	.00	.00	.00	.67	.00	.00	.00
B12. I always enjoy successful experience.	.00	.00	.00	.00	.69	.00	.00	.00
B20. I am good at schoolwork.	.00	.00	.00	.00	.76	.00	.00	.00
B28. I am a success as a student.	.00	.00	.00	.00	.70	.00	.00	.00
B01. I get on well with the other students in my class.	.00	.00	.00	.00	.00	.69	.00	.00
B06. people trust me.	.00	.00	.00	.00	.00	.70	.00	.00
B10. I am popular with other students.	.00	.00	.00	.00	.00	.75	.00	.00
B14. people look up with me.	.00	.00	.00	.00	.00	.73	.00	.00
B18. I feel easy to get to know other people.	.00	.00	.00	.00	.00	.69	.00	.00
B22. other people accept me as I am.	.00	.00	.00	.00	.00	.76	.00	.00
B26. other students are very friendly	.00	.00	.00	.00	.00	.64	.00	.00
B29. other people care what I think.	.00	.00	.00	.00	.00	.70	.00	.00
B04. the work we do is interesting.	.00	.00	.00	.00	.00	.00	.52	.00
B08. I always do the work that really interests me.	.00	.00	.00	.00	.00	.00	.72	.00
B16. I enjoy what I do in class.	.00	.00	.00	.00	.00	.00	.75	.00
B24. I get excited about the work we do.	.00	.00	.00	.00	.00	.00	.75	.00
B31. I like to do extra work.	.00	.00	.00	.00	.00	.00	.65	.00
B05. I really like to go each day.	.00	.00	.00	.00	.00	.00	.00	.81
B09. I get enjoyment from being there.	.00	.00	.00	.00	.00	.00	.00	.86
B13. I always miss very much.	.00	.00	.00	.00	.00	.00	.00	.84
B17. I like to be.	.00	.00	.00	.00	.00	.00	.00	.82
B21. I feel happy.	.00	.00	.00	.00	.00	.00	.00	.74
B25. I want to go even on holidays.	.00	.00	.00	.00	.00	.00	.00	.65

Factor correlation:

Positive Learning Experiences	1.00							
Teacher's Support in Learning	.80	1.00						
Active Learning Experiences	.73	.75	1.00					
Teacher-Student Relations	.66	.46	.47	1.00				
Sense of Achievement	.71	.52	.53	.79	1.00			
Social Integration	.48	.32	.34	.62	.71	1.00		
Adventurous Experience	.71	.51	.52	.76	.87	.77	1.00	
General Satisfaction	.67	.45	.46	.69	.75	.64	.84	1.00

Overall model fit: $\chi^2=32243.62$ (df=961), RMSEA=0.041, NNFI=.94 and CFI=.94.

Table 2 Descriptive statistics and the 2-way analysis of variance of the scale scores

	Descriptive Statistics								2-way ANOVA (School-level by Gender) ⁺		
	Primary School				Secondary School				School-level Effects	Gender Effects	School-level by Gender Effects
	male (N=4106)		female (N=3550)		male (N=5330)		female (N=6212)				
	mean	sd	mean	sd	mean	sd	mean	sd	F	F	F
Positive Learning Experiences	3.221	0.961	3.439	0.842	2.853	0.828	2.825	0.730	1598.75**	59.64**	100.26**
Teacher's Support in Learning	3.559	0.871	3.741	0.773	3.189	0.770	3.111	0.711	1911.68**	20.47**	128.64**
Active Learning Experiences	3.431	0.935	3.538	0.844	2.836	0.818	2.804	0.702	3044.14**	9.97**	33.44**
Teacher-student Relations	2.934	0.719	3.159	0.594	2.824	0.608	2.891	0.512	448.95**	268.18**	79.59**
Sense of Achievement	2.793	0.702	2.934	0.594	2.601	0.605	2.590	0.530	905.62**	53.38**	72.78**
Social Integration	2.875	0.679	3.025	0.606	2.820	0.553	2.939	0.463	71.76**	256.41**	3.48
Adventurous Experience	2.746	0.715	2.941	0.610	2.617	0.604	2.657	0.539	522.92**	169.43**	73.46**
General Satisfaction	2.696	0.827	2.915	0.730	2.494	0.710	2.578	0.644	641.70**	203.44**	40.24**

Note. ⁺Degree of freedom of F values: model=3, residual=19215. **p<.01

Table 3 Models of quality of school life as a function of classroom learning experiences and school-average academic standard

Quality of School Life										
	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>		<u>Model 4</u>		<u>Model 5</u>	
Fixed Effects	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Intercept	0.043	0.000	0.034	0.042	-0.002	0.034	-0.022	0.017	-0.025	0.015
Male			-0.250**	0.016	-0.350**	0.022	-0.163**	0.016	-0.165**	0.016
Secondary School			-0.334**	0.066	-0.443**	0.067	0.042	0.035	0.022	0.029
Male by Secondary School					0.214	0.032	0.048*	0.023	0.054*	0.023
Positive Learning Experiences							0.504**	0.010	0.504**	0.010
Teacher's Support in Learning							0.208**	0.010	0.208**	0.010
Active Learning Experiences							0.061**	0.008	0.060**	0.009
School-average Achievement									0.084**	0.018
Random Effects	Variance Component		Variance Component		Variance Component		Variance Component		Variance Component	
Intercept	0.067		0.041		0.040		0.010		0.008	
Positive Experiences							0.002		0.002	
Teacher's Support in Learning							0.002		0.002	
Active Learning Experiences							0.001		0.001	
Level-1 Residual	0.940		0.928		0.926		0.497		0.496	

Note. * p<.05, **p<.01.